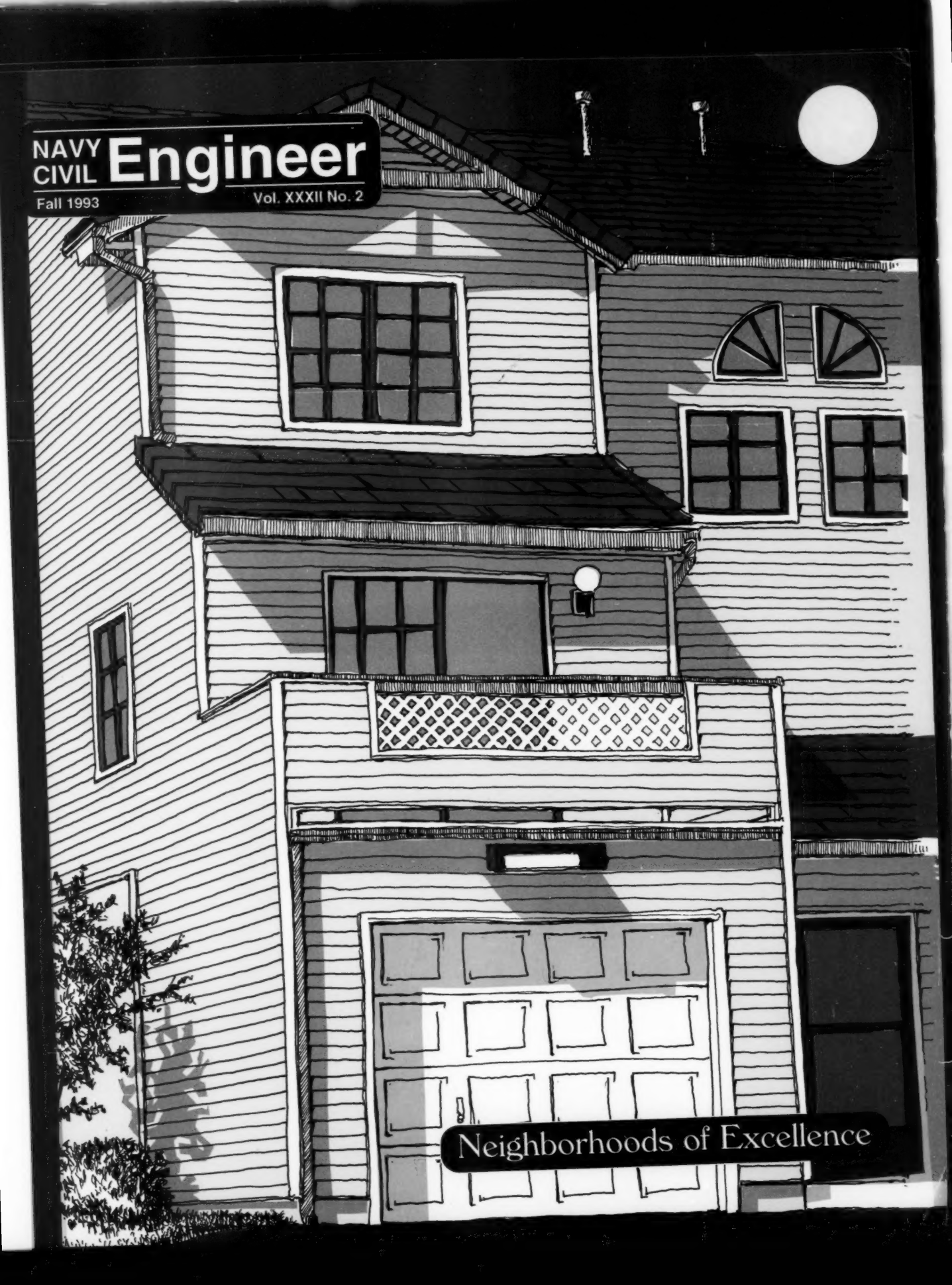
NAVY CIVIL Engineer
Fall 1993
Vol. XXXII No. 2
Neighborhoods of Excellence

Neighborhoods of Excellence

This issue of the *Navy Civil Engineer* magazine takes a look at the Navy's Neighborhoods of Excellence program for providing quality housing for Navy men and women and their families. Neighborhoods of Excellence efforts will include improved program management, customer services, housing staffing and maintenance. Additionally, existing housing will be renovated and new housing will be acquired. Over the next six years and beyond, Navy people and their families will see dramatic improvements in their quality of life. To learn about the many facets of NOE, read these articles:

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A playground in the Silver Strand community in Coronado, Calif.

Cover art by Bill Brack, Naval Facilities Engineering Command Headquarters, Alexandria, Va.

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Speaking from Topside

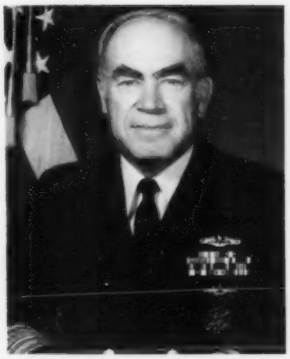
During my three years as Chief of Naval Operations, our Navy has faced a number of challenges and difficulties in a world that continues to change at a dizzying pace. Although the Cold War is over, our nation continues to rely on the forward deployed presence of our military forces. With the number of permanent bases overseas decreasing, an even larger share of the responsibility for providing forward presence for the U.S. will fall on our sailors and Marines. That means continued deployments and high operating tempos. The men and women serving aboard our ships, flying our aircraft and providing critical support from CONUS and overseas shore bases do a tremendous job. We have the finest fighting force the world has ever seen. In order to retain the best and brightest people our nation has to offer, we must focus on the issues that are important to them.

As CNO, my most important responsibility is as an advocate for sailors and their families. I am committed to seeing that our people have the quality of life they deserve. We are working to improve every facet of our sailors' lives, by enhancing MWR programs, holding fast to our promise of peacetime OPTEMPO/PERSTEMPO goals, improving availability of quality medical care and increasing the focus on Navy family housing. In fact, the Secretary of the Navy, the Fleet Commanders in Chief and I recently established housing as the Navy's premier quality of life issue.

Quality family and bachelor housing fosters pride and productivity among our people and generates their continued commitment to our professional military way of life. An integral element of quality of life, housing influences the career decisions of Navy men and women.

This fall the Navy kicked off a new program, Neighborhoods of Excellence, which will begin to erase the disparity between Navy housing and that of the civilian sector and other services. Beginning in fiscal year 1994, all aspects of Navy housing will receive increased attention. The Neighborhoods of Excellence program aims to eliminate housing maintenance and repair backlogs and raise all Navy housing to quality standards commensurate with those available off-base. All Navy-owned housing will be renovated and revitalized to create cohesive, well-ordered neighborhoods, and we will place new emphasis on program management, maintenance and customer service.

Neighborhoods of Excellence is an ambitious program, and its success will require the wholehearted dedication of all members of the NAVFAC team. Strong support from top levels of Navy leadership, coupled with the continuing efforts of our talented, highly focused housing specialists all over the world will enable the Navy to achieve its goal of consistently excellent homes wherever our sailors may be assigned.



ADM Frank B. Kelso II, USN

Protecting quality of life takes constant vigilance. While our force and base structure may be smaller in the future and fiscal constraints may limit resources, we must not compromise the quality of life of our sailors and their families. Our success with the Neighborhoods of Excellence program will help sustain a strong and viable Navy well into the 21st century.

F. B. Kelso II

FRANK B. KELSO II
Admiral, U.S. Navy
Chief of Naval Operations

Howard Gilmore Terrace in La Mesa, Calif., is an example of the quality housing the Navy is providing for its families.

Neighborhoods of Excellence: The Navy Renews Its Commitment to Quality Housing

By William McCay

Neighborhoods of Excellence: the words describe the Navy's goal for all family housing and underscore a renewed commitment to improving the quality of life for all military families. Over the next six years, the Naval Facilities Engineering Command, as the program manager for family housing, will oversee a major rehabilitation of all aspects of the family housing program.

Attention was drawn to Navy housing a few years ago as the services began to focus upon quality of life in retaining well-qualified officers and sailors. Comparisons were being drawn among the quality of life career sailors, Marines, soldiers and airmen could expect in their respective services. The Army and Air Force scored higher than the Navy.

Rear Admiral Roberta (Bobbie) Hazard, then director of personal readiness and community support, made it her personal campaign to make changes that would benefit

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William McCay is the Neighborhoods of Excellence coordinator at the Naval Facilities Engineering Command Headquarters in Alexandria, Va.

future Navy service members and their families. "I have really pushed housing because [each] of us, single and married, has to live someplace, and you spend a fair amount of time in a residence, wherever it is," she said in an 1992 interview in *All Hands* magazine. "So [housing] assumes significant importance to single and married members—and the latters' spouses and kids."

Through RADM Hazard's determined efforts, dramatic changes are planned for the next six years and beyond. To support those plans, the Navy will obtain increased funding beginning in FY 94 and continuing through FY 99. The funding plan represents a 30 plus percent increase over previously anticipated funding levels. The increased funding is aimed at eliminating the housing maintenance and repair backlog of approximately $2.1 billion and raising all Navy housing to a quality standard commensurate with the civilian community.

The Navy is taking a holistic approach to improving housing: not only will Navy housing receive a great deal more attention, but the Navy will focus on housing management and the services provided through housing management.

To manage such a large undertaking, the Neighborhoods of Excellence (NOE) program has been divided into nine components: program management; command responsibility; customer services; family housing staffing; customer service training; automated data processing (ADP); maintenance services; revitalization; and acquisition.

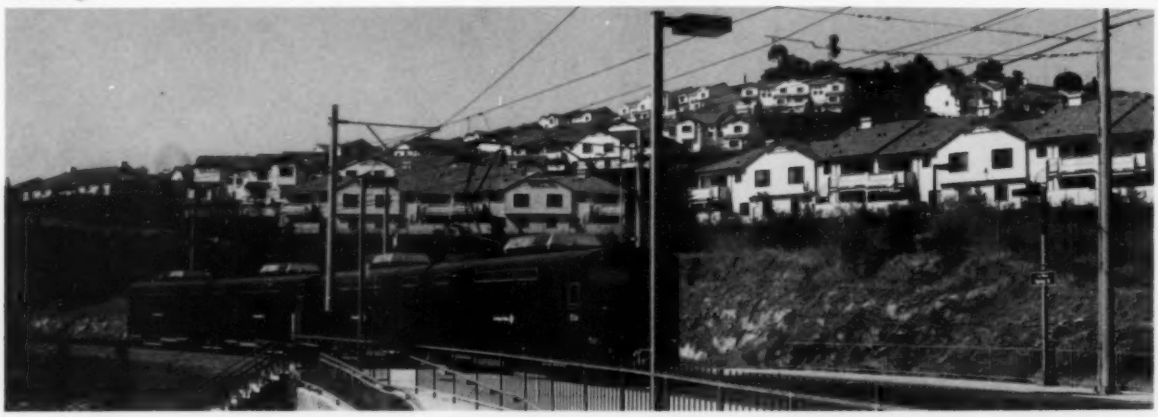
• **Program management.** NAVFAC will continue to centrally manage family housing, including programming and distribution of funds. The roles of the major claimants will increase as they become more involved in approving program objective memoranda and budget requests. Also, the major claimants will assign a family housing specialist as a permanent staff member.

• **Command responsibility.** Quality of life responsibilities are being added to the duties of commanding officers, giving them clear responsibility for family housing. In those areas where several commanding officers function as housing authorities, their housing management, assignment and referral policies will become consistent for all activities within their commuting area. Again, toward bringing consistency into all aspects of the program, standardized tenant-landlord responsibilities and liabilities will be published.

• **Customer services.** Every effort will be made to determine the kinds of services customer families want and need and to develop a means of providing those services. Customer service standards for all housing offices means equal treatment in the housing office in Pensacola, Fla., as well as Adak, Alaska. Service members and their families will know what to expect as they travel from one duty station to another. A housing awards program, similar to the Admiral Elmo R. Zumwalt Awards for excellence in bachelor quarters, is being developed to stimulate positive progress and improvements.

• **Family housing staffing.** Strong emphasis will be placed upon making sure professionally trained personnel are employed at all levels to carry out the enhanced functions of the program. Functions and standards are

Howard Gilmore Terrace in La Mesa, Calif., is conveniently located on the trolley line, which takes residents into downtown San Diego.



being reviewed to incorporate enhanced NOE requirements. Generic position descriptions will be available to housing offices for their recruiting efforts.

• **Customer service training.** The NOE program will develop and sponsor regular customer service training for all housing specialists and maintenance contractor staffs. The training will instill quality standards and teach everyone how to function successfully in a customer-oriented society.

• **Automated data processing (ADP).** The Navy will accelerate standardized automation for all housing offices and continue to develop systems and programs to streamline all housing actions and decrease inconveniences to our customers.

Navy children enjoy the playgrounds scattered throughout the Silver Strand community in Coronado, Calif.

• **Maintenance services.** Generic performance standards and specifications are being developed for contractor and station forces to guarantee uniform maintenance practices for all housing. Maintenance contracts will be revised to become more customer oriented. For instance, maintenance contracts will call for extended hours to provide after hours service to working families. The option of scheduling maintenance by appointment will be included, and customer service training for maintenance personnel will be required.

• **Revitalization.** This initiative will reflect the most dramatic changes in family housing and will account for the largest expenditure of additional funding. Comprehensive neighborhood plans (CNPs), which are basically master plans for family housing, will guide the renovation of every government-owned housing area.

By the end of FY 95, CNP development will be completed or underway for every neighborhood. All actions necessary to create a cohesive, well-ordered neighborhood will be included. Using the CNP as a guide, activities will then create project documentation and program for renovation.

• **Acquisition.** Solicitation and selection procedures for acquired housing will be revised to include the active participation of housing managers. The request for proposal for new acquisition, NAVFAC Instruction 11101.85, will be revised to incorporate NOE standards. Future acquisition scopes will include complete neighborhoods with landscaping, support and recreation facilities and all other amenities needed to provide a high quality of life for the intended residents.

•••

The Neighborhoods of Excellence program is ambitious and will require the dedication of all NAVFAC members. With strong support from top levels of Navy command and talented, highly focused housing specialists all over the world, the Navy is poised to make a power run for excellent homes wherever our troops may be assigned. ❑

Comprehensive Neighborhood Plans: The Navy's Guidelines for Developing Communities

By Billie Patel

One of the basic elements of the Neighborhoods of Excellence family housing program is the development of comprehensive neighborhood plans (CNPs). CNPs are the mechanisms that will guide the Navy in its development of housing construction and revitalization.

The Naval Facilities Engineering Command engineering field divisions will develop CNPs for all Navy housing assets by the close of FY 95. NAVFAC has established guidelines for the development of CNPs to guarantee a consistent level of quality. The CNP gives our customers—the military community—neighborhoods that are comparable in design and have amenities similar to those found in the private sector.

The CNP assesses the existing facilities and recommends whether the interior and exterior of the housing units should be revitalized. These modifications may include upgraded kitchens, baths and windows; new air conditioning, siding, roofs and garages; electrical upgrades; and reconfigured interiors.

The CNP also assesses the need for community support services such as child care centers, convenience stores, landscape maintenance and mass transit shelters.

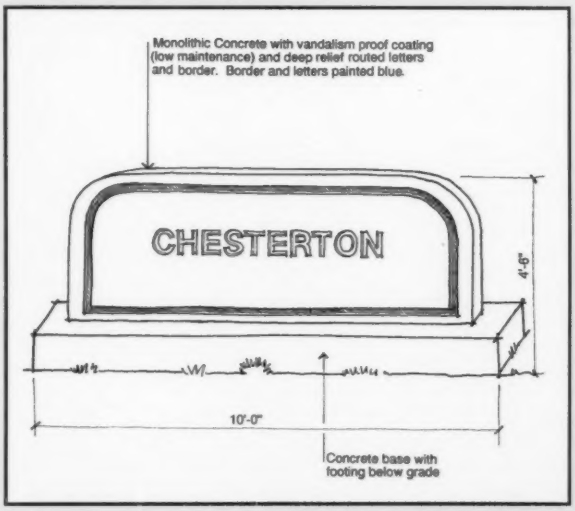
The CNP evaluates the community surrounding housing sites located off-base, looking at the architectural character of the neighborhood, historical relationships, cultural influences and family composition. The CNPs provide for adequate open spaces, expanded parking areas, jogging trails, bike paths, circulation routes, parks, fences and landmarks that provide a sense of neighborhood. CNPs provides for visually exciting entrances that create a sense of arrival, creating a lasting first impression and a sense of community. Architectural style, housing density and building separation are also addressed in the CNP.

Navy architects, engineers, housing specialists, and public works, maintenance and support personnel produce CNPs. Additionally, private sector architects and engineers provide an independent assessment of our housing communities. During the development of CNPs, planners and design personnel meet with family housing tenants during community meetings to solicit opinions and recommendations regarding the revitalization of the neighborhoods.

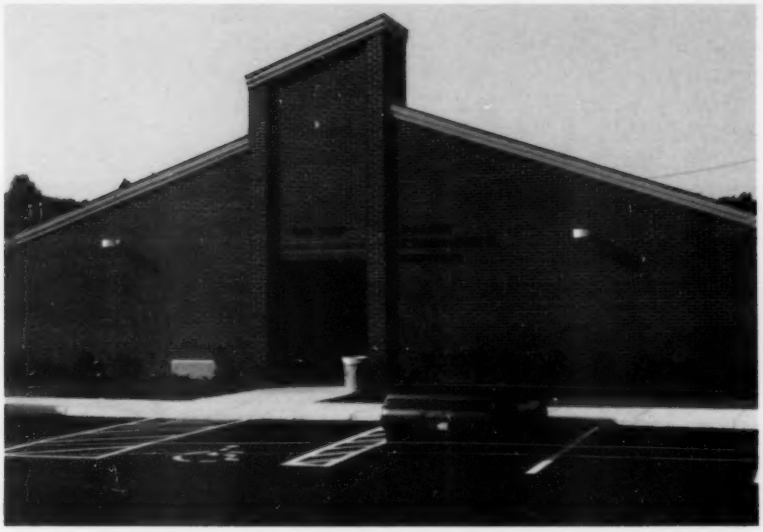
Various contracting vehicles are being used to develop CNPs. In areas where whole house renovations are under design, CNPs are incorporated in the existing scope of work. Design build contracts that use requests for proposals (in which the contractor both designs and constructs revitalization efforts) will incorporate neighborhood plans. This type of contracting vehicle affords a multitude of design proposals from which to choose and shortens the time of construction. These contracts are being used at large activities with numerous housing sites to help execute the program in the least amount of time.

Work identified in CNPs and developed into revitalization projects will receive priority attention in the development of out-year programming and funding. Through the development of creative CNPs, the Navy's Neighborhoods of Excellence program will achieve its commitment to revitalization and improvement of its military family housing assets. ❑

Details such as signage are also included in the comprehensive neighborhood plans.


Monolithic Concrete with vandalism proof coating (low maintenance) and deep relief routed letters and border. Border and letters painted blue.
CHESTERTON
4'-6"
10'-0"
Concrete base with footing below grade

Billie Patel is a housing management specialist at the Southwest Division of the Naval Facilities Engineering Command in San Diego, Calif.



This new community center improved the quality of life for family housing residents at Camp Allen. This center serves the Camp Allen, Capehart and Torgerson communities.

PWC Norfolk Meets the Challenge of Revitalizing Navy Family Housing

By Betty Bates
George Little

"Never has the importance of housing to Navy members and their families been more demonstrable, nor the tie between quality housing and morale, retention, and readiness more clear than it is in the current environment. ... your Navy has made a commitment to tackle head on the multiple issues of availability of adequate housing in the civilian community and on our bases, the quality of our housing, neighborhoods and our customer services."
—Admiral F. B. Kelso II, Chief of Naval Operations, Sept. 8, 1992

The importance of housing to Navy leadership has been clearly established. The Secretary of the Navy, the Chief of Naval Operations and the Commanders in Chief have established housing as the Navy's premier quality of life issue. Installation commanding officers have been challenged to provide and maintain quality family housing and improve customer service. Revitalizing existing housing has been identified as the number one priority for Navy family housing.

The challenge presented by Admiral Kelso and Navy leadership has particular relevance for the Public Works Center Norfolk, Va., Navy Family Housing Department. Located at a large naval complex, PWC Norfolk family housing supports more than 50,000 Navy families and manages more than 3,700 military family housing units. Housing assets are located in four cities in Hampton Roads, each of which has unique characteristics and requirements. Unit types include buildings on the historical register, acquired Army units, units excessed by municipal governments, long term leased (801) units and those constructed under more traditional programs. The ages of the units range from pre-Civil War (1824) to the modern leased units constructed in 1987.

The PWC Norfolk staff, with the support of the Atlantic Division, Naval Facilities Engineering Command in Norfolk, Va., is in the forefront of housing leadership in implementing new Navy policy through the development of a comprehensive revitalization program.

Customer satisfaction

Quality, compatibility and aesthetics are the cornerstones of the Norfolk family housing program. Revitalization projects are developed with customer satisfaction being foremost in the minds of the architects, planners, project managers and housing representatives. Plans are defined in terms of social and personal needs and expectations. Standards have been developed to guarantee quality, durability and consistency in community design, function and facilities maintenance.

Historically, public housing, including military housing, has been developed and managed within the framework of a civil engineering matrix, based on the cost and its compliance with relevant construction codes. Communities were built along spatial grids with little consideration given to the dehumanizing effect of envi-

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Betty Bates is the head of the Navy Family Housing Department at Public Works Center Norfolk, Va. George Little is a management analyst in the Management Department at PWC Norfolk.

ronmental monotony. Decisions regarding repair versus replacement were made based almost entirely on economic considerations.

Economic analysis

The initial step in the PWC Norfolk program was to assess the current condition of the housing and determine the repairs and improvements required for revitalization. Once the required work was identified, the cost of revitalization per unit was calculated.

If this cost exceeded $50,000 per unit, as adjusted by the area cost factor, or the average unit cost exceeded 60 percent of the average replacement value as calculated by the Office of the Secretary of Defense tri-service model, an economic analysis (EA) was performed.

Four options are considered in the EA. The first, status quo, is a "do nothing" alternative. Under status quo, routine maintenance and repairs are done. However, no revitalization takes place. The second option is revitalization by repairing and improving the unit. Replacement is the third option. Direct compensation, which provides payment of housing allowances to families thus enabling them to live on the economy, is the fourth option.

With the link between quality of life issues, fleet readiness and morale clearly established, PWC Norfolk had to decide the right way to revitalize Navy housing in Hampton Roads. In many cases, the standard EA did not produce a clear cut decision. Past practice had favored repairing and improving existing assets, since this approach is easier to accomplish and has less risk than replacement.

Projects are called whole house projects and result in improved structural, mechanical and electrical systems, streets and, occasionally, landscaping. They do not address the character and quality of the community as a whole and its significant influence on the social and emotional life of the residents.

The pitfalls quickly became evident. The standard model used in the EA focused on the cost to revitalize the structural components or systems and did not factor in quality neighborhood design standards.

The Neighborhoods of Excellence philosophy demands that decisions regarding revitalization be made using a comprehensive set of quality criteria. Community order, completeness and visual impact are now important areas of concern. Housing unit maintainability is still critical; however, aesthetically pleasing interior and exterior appearance, entrance designs and signage, and environmental compatibility must also be considered.

Quality, compatibility and aesthetics are the cornerstones of the Norfolk family housing program.

The PWC Norfolk approach to revitalization is based on a comprehensive strategy that includes an evaluation of neighborhood layout, aesthetic design, unit livability and condition, as well as the overall influence of the community on the social and cultural lives of the residents. It does not abandon the analysis of the various components but rather builds on existing Modernization and Repair Inspection Program (MODRIP) reports and, with the assistance of a private architectural and engineering firm, further develops and expands the scope of revitalization.

PWC Norfolk built its case for change on facts and figures related to the repair and improvement of housing systems and the quality of the community as a whole. Residents, engineers, architects and housing specialists joined forces to evaluate, plan and design improved neighborhoods. Projects, both large and small, are taking on a human dimension. Privacy and split rail fences are replacing chain link barriers, new housing designs are more varied in both interior and exterior design and colors, and greater emphasis is being placed on landscaping, open space and recreational planning.

There has also been a change in housing vocabulary as housing projects become communities, tenants become residents and housing units become homes.

Comprehensive neighborhood plans describes the architectural theme and character of the neighborhood taking into account the local environment, historical relationships and influences, installation architectural plans, local cultural influences and the makeup of the resident population. Effective and well-developed neighborhood plans address issues related to all facets of civil, architectural and social planning.

For PWC Norfolk, the development of Neighborhoods of Excellence means a commitment to the community as a whole. It means looking beyond the requirements of specification guides and manuals to address human concerns. Navy Neighborhoods of Excellence has set the standard for Navy family housing. Through comprehensive planning, PWC Norfolk family housing is positioning itself to meet the future housing needs of Navy families. ❑

N-I-M-B-Y

Overcoming Community Opposition to Navy Housing

By Jeannie Light

N-I-M-B-Y—Not in my backyard. We've all heard the expression and have a good idea why people don't want airports, landfills or hazardous wastes in their neighborhoods. But, would you consider providing much-needed, new, modern family housing for junior enlisted personnel a NIMBY issue? Surprisingly, efforts to get some of the 12,000 junior enlisted personnel off housing waiting lists and into quarters continues to be a difficult community relations issue for the Navy in San Diego County. Local residents, almost without exception, initially do not relish the idea of having these young men and women and their families as next-door neighbors.

Why? What is it that these communities object to?

"For the most part, when the community thinks of Navy housing, they picture in their minds a run-down, low-cost development," says Karen Ringel, a housing planner at the Southwest Division, Naval Facilities Engineering Command in San Diego, Calif. "That's a misconception, and we're working very hard to correct it." And, in areas where housing has been built over the past five years, the Navy has been very successful in keeping communities happy.

Jeannie Light is the public affairs officer at the Southwest Division, Naval Facilities Engineering Command in San Diego, Calif.

Another stumbling block is the anti-development sentiment that is prevalent in the affected communities that feel they are either already over saturated with development or wish to retain the open area and low densities now in existence in their areas.

Ringel notes that she understands these and other community concerns; yet, the fact remains: the Navy has purchased the land and needs to build housing on it.

Improving community relations

When the decision is made to purchase land and build housing, the Navy immediately embarks on a process to improve community relations and gain public acceptance of the housing project. The first step in that process is to form an internal task force to discuss just how much public involvement is needed.

The amount of involvement depends on the anticipated community reaction. Prior to going public, the task force meets with a SANDAG (San Diego Association of Governments) representative to get a reading on the community's concerns. This reading prepares the task force for its future meetings with the various city managers, planning departments, schools and other community task forces. Once the Navy has briefed the project to the council, a special city or community/Navy task force is cre-

Navy family housing in the Silver Strand community in Coronado, Calif., features access to the beach and open spaces.

ated. This allows the community to get involved and have some say in project development.

During the planning of the Coronado, Calif., housing, the community surfaced access to the beach, open spaces, trees and the color of the roof tiles as their important issues. At Scripps Ranch, landscaping and assimilation into "well-to-do" neighborhoods were major issues.

In an era where quality of life is a top priority, the Navy is doing its best to provide its sailors with housing that is second to none.

Ringel noted that the community of Chula Vista, Calif., initially was the most difficult to work with because of the number and type of issues involved. However, it eventually became "our biggest success story," she says. "They even threw a barbecue party for us!"

The Navy wants its projects to blend in to the existing community. Often, just showing photographs of Chula Vista, La Mesa or Coronado does the trick when trying to convince communities the Navy project will be a high-quality development.

After all, how many enlisted housing areas can boast of being built on a hillside with gorgeous mountain views (La Mesa), or straddling a piece of land bordering the Pacific Ocean and San Diego Bay (Silver Strand)? In an era where quality of life is a top priority, the Navy is doing its best to provide its sailors with housing that is second to none.

The Navy will continue to work with communities to build and foster better relationships. "When these families move in, we want them to feel welcomed and motivated to become active and productive members of their communities," Ringel says. ❑

This housing at Park Summit in San Diego, Calif., was acquired through the military construction direct purchase program.

Have You Considered the MILCON Direct Purchase Alternative?

By CDR James D. McCarty, USN

Let's say you are responsible for government housing at your activity and your geographic area has a housing deficit. You've done your homework: the deficit has been verified by both the family housing survey and an independent market analysis. Your staff has worked with your engineering field division (EFD) to develop an acquisition program that will add the necessary housing units to your existing housing inventory. The programmed units have gone through the review process and have been approved. Congress has authorized your new units. Your next step is to construct the units. But, wait! Is this the fastest way to get the units? Maybe not.

The public law allowing construction of the units, 10 U.S.C. 2824, also permits the acquisition of existing private sector housing instead of using the authorization to build. Military construction (MILCON) funded direct purchase is usually a much faster method of acquiring units and getting them on line for your waiting military families. For several years now, the Navy Complex San Diego has been successfully using MILCON direct purchase to reduce its housing deficit.

CDR James D. McCarty is the director of Military Family Housing, San Diego Area in San Diego, Calif.

Planning for MILCON direct purchase is similar to construction planning. At Navy Complex San Diego, we first determine if our geographic area has sufficient existing civilian housing assets or units under construction by civilian contractors to meet our needs. Next, we determine if the building owners or developers are interested in selling their projects to the government. To get this information, we conduct a forum for local apartment building owners and developers. At the forum, we express our desire to purchase units, explain the bedroom composition and other requirements, and then let the owners and developers ask questions. As a result, we determine if MILCON direct purchase is a viable option.

Request for proposals

If MILCON direct purchase is viable, we develop a request for proposals (RFP) through close coordination with the EFD personnel. We incorporate Neighborhoods of Excellence standards in our proposals. The RFP is advertised and a project submission date established for receipt of the proposals.

In developing an RFP, we include these basic areas of consideration:

- Geographic proximity to military installations
- Bedroom configuration that meets our requirements
- Conformance to unit square footage limitations and requirements
- Conformance to sprinkler and smoke detector requirements
- Warranty items and time period
- If the units are occupied, vacancy and relocation plans for current residents

In the MILCON direct purchase process a technical evaluation board (TEB) and a source selection board (SSB) must be established. The TEB evaluates the proposals for technical compliance to the RFP and makes recommendations concerning the strengths and weaknesses of each of the proposals. The SSB reviews the results of the TEB and makes selection recommendations to the contracting officer.

Navy Complex San Diego has successfully used MILCON direct purchase. Over the last few years, these family housing sites have been acquired through this method:

Site	Year	No. Units	Cost
Terrace View Villas	1989	236	$14.9 M
Bonita Bluffs	1991	75	$ 5.8 M
Ramona Vista	1991	88	$ 5.2 M
La Mesa Park	1991	56	$ 5.5 M
Paradise Gardens	1992	46	$ 3.7 M
Park Summit	1992	30	$ 3.3 M
Beech Street Knolls	1993	72	$ 4.5 M
Holly Square Apartments	1993	13	$ 1.4 M

These units have been added at a time savings of approximately two years per site. If you are interested in the MILCON direct purchase alternative, please call Rich Johnston, Naval Base San Diego Military Family Housing, on DSN 526-8018 or commercial (619) 556-8018. ❑

Resources Center Standardizes Navy Housing Services

A Neighborhoods of Excellence Resources Center that recently opened at the Public Works Center Norfolk, Va., distributes free housing-related products to Navy housing offices throughout the world. The resources center, managed by the PWC's housing department, simplifies standardization of the routine services provided by housing offices. This standardization is one of the major initiatives of the Neighborhoods of Excellence program.

A checklist of available items is periodically distributed, and orders are accepted at any time. For example, tool kits stenciled with the NOE logo and personalized with the housing office's name are distributed to housing offices. The tool kits are given to each new family as they accept housing at a new duty station. Residents are encouraged to perform minor maintenance and repairs on their homes using the tools. The Navy can realize significant savings for each minor repair performed by residents rather than through contracted service.

Yard of the month signs are also available through the resources center. The signs are attractive and reflect the Navy's desire to promote and recognize residents' efforts to improve the quality of their homes. The center also stocks items that promote the NOE program.

Kathy Blinn is the director of the resources center. She can be reached by calling the housing department at PWC Norfolk on 1-800-628-9663 or by fax on (804) 444-1969. ❑

—Gail Saunders, Neighborhoods of Excellence coordinator, Atlantic Division, Naval Facilities Engineering Command, Norfolk, Va.

Departure Services Helps Families Make Transition to New Duty Stations

By Martha P. Kessler
Betty Everson
Dawne Brooks

When a military member receives orders to a new duty station, the first question is probably, "What do I do first?" Family housing personnel in Norfolk, Va., have an answer: go to the Navy Housing Welcome Center and visit the Departure Service Branch. Its service counselors can help military and civilian Department of Defense personnel leaving the Norfolk Naval Base vicinity make a smooth transition to new duty stations.

"Knowing as much as possible about a new area is so important to a person or family. Our job is to provide as much information as possible to help our customers become more knowledgeable about housing at their next duty station," says Betty Everson, manager of the Departure Service Branch.

Housing departure services for outbound personnel became available at the Welcome Center in October 1992. The service offers extensive information, counseling and workshops to help personnel plan a move with minimum complications. Inclusion of departure services at the Welcome Center gives customers a one-stop location for their arrival and departure housing needs.

Customers find a library filled with information on more than 100 Navy and Marine Corps installations. The library includes pamphlets, city maps, newspapers and information on schools and community housing (rental and sales). Short videos on various locations familiarize newcomers to an area. Some of the videos feature available housing in the community. Base installation information is available on base housing, exchanges and commissaries. A photocopy service allows customers to copy information they need to help plan their move. Telephones and electronic facsimile (fax) services enable customers to make immediate contact with offices and services at the new duty station.

Housing counseling addresses individual and family relocation needs. Counselors conduct an assessment survey to identify travel, housing, educational and personal needs. A counselor will contact the customer's new command to identify the service member's sponsor and to get pertinent information from the sponsor which may help the service member.

Housing availability

Information on base housing availability and waiting periods, bachelor quarters, area Variable Housing Allowances (VHA), temporary lodging, the new duty station and more is accessible through an interactive computer program called PCS House. Departure service real estate special-

An upcoming move to a new service station is planned by SKC Daniel Curran and his wife, Sharon, in the Departure Service Branch of the Norfolk Navy Housing Welcome Center. The storekeeper chief locates local housing near his future duty station on maps provided by departure services. (Photo by Martha P. Kessler)

Martha P. Kessler is the public affairs officer at Public Works Center Norfolk, Va. Betty Everson is a housing manager and Dawne Brooks is a realty specialist at PWC Norfolk.

ists stay current on realty legislation, policy and procedures by actively participating in local real estate agent, builder and property management association meetings.

Real estate workshops are held to provide extensive instruction on home selling, home buying and property management. Homeowners (and anyone else who is interested) can gain invaluable information from workshops designed to help them with their decision to sell or rent before they report to their new duty station.

Counselors conduct an assessment survey to identify travel, housing, educational and personal needs.

The workshop curriculum includes how to choose a real estate agent or property management company, financing facts, leases, inspections and appraisals. The courses offer potential home buyers information on purchase contracts, buyer brokerage, the escrow account, kinds of financing available and the closing process. The workshops are open to all military and civilian DOD personnel and their families. In addition to the workshops, the departure center has workbooks that include definitions of real estate terminology and loan information.

Other services and products will become available through the center as its personnel broaden their search for materials that will be useful to departing families. "We will continue to expand our information base to keep it current and to provide more and better services to our customers," Everson concluded. ❑

The lawns may not yet be developed, but Mariner Village residents are pleased with their new homes.

Moving Day for the Navy's First Mariner Village Residents

"Is this really military family housing?" exclaim families as they guided the flow of furniture and boxes into the right rooms of their new home. Moving vans are a daily sight in the cul-de-sacs in Mariner Village, a unique new Pensacola, Fla., community construction for enlisted military families.

Mariner Village, sometimes referred to as "801" housing, is a 300-unit single family housing development owned and constructed by First America Development Corporation and managed by Mariner Village Maintenance Company. As the homes are completed, they are leased to the government for 20 years as provided for in Section 801 of the Military Construction Authorization Act.

A quick glance will tell you these are not standard military housing units. Unlike traditional military family housing, these homes feature six different floor plans and a variety of exterior designs, eliminating that poured-from-the-same-mold appearance. These two- and three-bedroom "Good Sense/Comfort Plus" homes are built on a site that boasts five and a half acres of lakes, ball fields, tennis and basketball courts, and jogging trails. Conveniently located throughout the complex will be tot lots, playgrounds and picnic areas. The community center will also be a focal point at the village entrance. The only traditional military theme is the street and cul-de-sac names, which are in recognition of historic ships and battles.

The first Mariner Village units were accepted in April 1993 when more than 85 families moved into their new homes. The project is due to be completed by September 1993.

Navy leadership has placed special emphasis on quality of life, and Mariner Village is a glowing example. ❑

— Sally Taylor

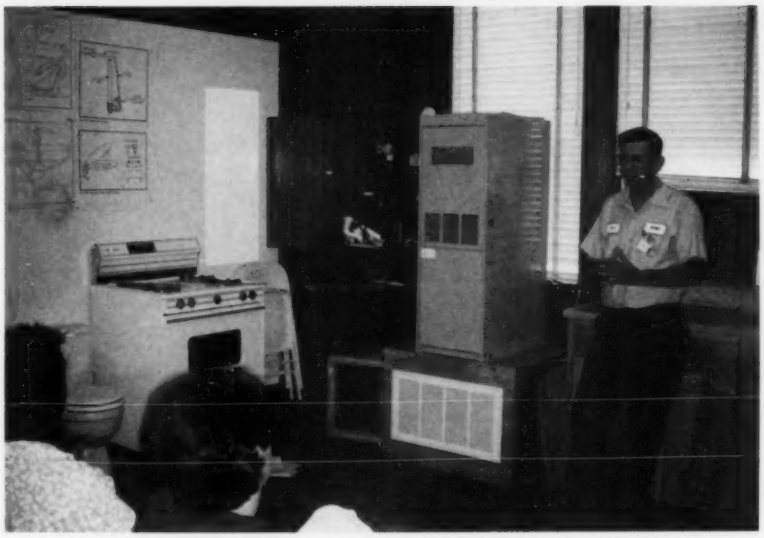
Call for Artifacts

If you have an old photograph, manual, artifact or blueprint of Navy family housing from the early days, the Naval Facilities Engineering Command Neighborhoods of Excellence coordinator would like to hear from you.

A new administrative building was completed recently at the Family Housing Management Institute in Jacksonville, Fla. Part of the building will be used as an extension of the institute's training facility, where students learn the latest techniques in housing management, renovation and construction. A section of this area is being reserved to display historical artifacts and other family housing items of interest.

If you have something you think may be of interest, please call William McCay at DSN 221-0511 or commercial (703) 325-0511. ❑

— Gail Saunders



Instructor Kermit Groat discusses appliance care and maintenance during a Self-Help Academy session.

Navy Families Earn Degree of Confidence at Self-Help Academy

By Sally Taylor

Clogged drains, jammed garbage disposals and leaky faucets are minor inconveniences that plague every household, and Pensacola's Navy family housing occupants are not spared these problems. However, residents do have ready solutions for most of these problems—solutions learned at the Self-Help Academy.

Residents don't earn a college degree at this academy, but they do earn a "degree" of confidence that they can handle minor maintenance chores. They also learn when *not* to tackle a home repair or maintenance procedure.

The Navy Public Works Center Pensacola, Fla., Housing Welcome Center, located at the entrance to the Naval Air Station Pensacola, conducts an innovative Self-Help Academy for newly arrived service members and spouses. Instructors demonstrate how to change air conditioning filters; check heating units and water heaters; reset garbage disposals; do routine maintenance on stoves, ovens, refrigerators, faucets and commodes; and care for carpet, tile and floors. Fire safety and smoke detector maintenance are also stressed. "If a pilot light goes out on a furnace or kitchen range, we want them to know the safe way to restart it," says Self-Help Academy instructor Kermit Groat.

By introducing the pride of ownership concept, housing staffers believe that residents feel a vested interest in caring for "their homes." According

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Sally Taylor is the public affairs officer at Public Works Center Pensacola, Fla.

to housing director Harry Brown, "This is a double-sided benefit. With proper maintenance, the life of household appliances and systems are extended and fewer service calls are required, providing quite a cost savings in these budget conscious times."

And now, the rest of the self-help story! The PWC's Housing Welcome Center also operates two well-stocked Self-Help Stores, which resemble small town hardware stores. They carry more than 160 expendable items and 63 returnables, such as lawnmowers, hoses, weeders and special tools. Residents, using skills learned in the Self-Help Academy, can tackle routine repairs without having to wait for responses to service calls.

Residents are encouraged to set the example in their neighborhood through lawn and garden care, and landscape design. By encouraging each family to take a proactive role in making its new Navy residence its "home," neighborhoods flourish. Families vie for yard of the month honors.

The pride of ownership philosophy, fostered by the family housing staff, is paying dividends. Well over 12,000 people have used the self-help stores during *each* of the past three years. More good news is that resident involvement in self-help doesn't stop at the property line! Residents also participate in community playground improvements and repairs. Their ideas for future improvements are sought through neighborhood meetings with housing liaison officer representatives. And family housing staff members listen!

We must continue to emphasize the quality of life issues. Pensacola's PWC Housing Welcome Center has taken the lead through expanded programs to provide quality service, assistance and that personal link between the military family and its personal requirements. ❑

Electric Service Deposit Program Eases Financial Burden for Moving Families

Moving is expensive. Security deposits are needed to rent a house or apartment, and the telephone company and the electric company want deposits as well. In Pensacola, Fla., the deposit for the electric utility company, Gulf Power, is $150. To alleviate this financial burden, the Welcome Center at Pensacola Naval Air Station has negotiated a contract with Gulf Power to waive this deposit for military members stationed in the area.

The Electric Service Deposit Program (ESDP) for military personnel, initiated in 1990, provides waivers for military personnel stationed at the military bases served by Gulf Power. These bases include Tyndall Air Force Base, Panama City Naval Coastal Systems Center, Hulburt Field, Naval Air Station Whiting Field and Eglin Air Force Base.

The contract waives deposits for military personnel stationed in the Pensacola area who do not have an electric utility credit reference or history letter from their last home. The contract allows people to remain in the program so long as they don't become a credit risk.

The Welcome Center provides the waiver forms to the service member, but the agreement and liability are strictly between Gulf Power and the service member. All information collected by the Welcome Center while acting as a third party provider is protected by the Privacy Act of 1974.

The ESDP has been very successful in the Pensacola area. The Welcome Center processed 3,489 waivers in FY 92. Lyn Barchett, director of the Personnel Support Division at the Welcome Center, estimates nearly 100-percent participation of people eligible for the program.

As the Navy becomes smaller and leaner, we in the housing business are looking to provide better services to our military members. The Electric Service Deposit Program for military personnel helps the service member cope a little better with the sometimes unpleasant experience of moving by providing some financial relief. ❑

— ENS Raul I. Canales, USN, Public Works Center Pensacola, Fla., Family Housing Department

The Inside Story: Four Families Tell What It's *Really* Like Living in Neighborhoods of Excellence Housing

By Karen Fedele

"I can't believe this is Navy housing. It is so nice!" This is a common refrain from residents of Navy Neighborhoods of Excellence prototype housing in the San Diego, Calif., area. For the past couple of years, families living in NOE showcase housing communities have been exposed to the Navy's new approach to the way it provides housing for its people: enhanced services, more and better amenities, a higher quality of housing and a focus on creating communities. (Although the NOE program was not kicked off until the fall of 1993, prototypes of NOE communities have been constructed over the past few years.)

Marietta Alexander and daughters (clockwise from right) Valencia, Shalisa and Laquetta at home in Howard Gilmore Terrace. Sharad Alexander was unavailable for the photo.

Recently four Navy families discussed with a reporter what it is like to live in NOE communities. Two of the families live in Howard Gilmore Terrace in La Mesa, and the other two families live in the Silver Strand development in Coronado. Here are their comments.

The Peters family

"We got lucky," says Jeannette Peters, speaking of her home at Howard Gilmore Terrace in La Mesa, Calif. Mrs. Peters, her Marine husband Sonar Technician G (Surface) Second Class Mark Peters, their 4-year-old son Ryan and 2-year-old daughter Brianna live in a three-level townhouse in the housing development located 15 miles east of San Diego. Built on a hillside, Howard Gilmore Terrace, with its winding streets and neatly landscaped lots, is home to 244 junior enlisted families.

Mrs. Peters says she likes the layout of her 1,250 square foot townhouse, which has three bedrooms, a two-car garage, a patio and separate storage area.

STG2 Peters and Mrs. Peters say the housing is a big

Karen Fedele is editor of the Navy Civil Engineer magazine and assistant public affairs officer at the Naval Facilities Engineering Command Headquarters in Alexandria, Va.

improvement over some of the old Navy housing they have lived in. Howard Gilmore Terrace homes are full of amenities, such as the garbage disposals and dishwashers in each unit, and the wood frame townhouses are attractive. The Peters children play in the recreation areas scattered throughout the development. Additionally, the Peters family likes the sense of community at Howard Gilmore Terrace.

Located only a short walk from the Peters' home is the Spring Street station of the San Diego trolley line. Mrs. Peters says she enjoys taking the trolley for day trips to Tijuana, Mexico, and STG2 Peters rides it into downtown San Diego.

The Alexander family

The Alexander family also enjoy life in Howard Gilmore Terrace. Boatswain's Mate Second Class Sharad Alexander, his wife Marietta, and their daughters, 12-year-old Laquetta, 5-year-old Shalisa and 2-year-old Valencia live in a three-bedroom bi-level townhouse. Residents since November 1992, they moved in when the townhouse was brand new. "It's really nice." Mrs. Alexander says. "The environment is nice and I like the two levels."

She says when her friends, both Navy and civilian, visit, they say, "This can't be Navy housing!" "I wish I had this [housing] when we were in the Navy," her retired friends tell her.

Mrs. Alexander likes the carpeting throughout the house and the appliances (gas range, refrigerator, dishwasher, garbage disposal and smoke detectors) that come with each townhouse. Additionally, all homes have attached garages and hook-ups for washers and dryers.

She and her husband are especially happy that their children can attend good schools near their home, Mrs. Alexander says. Laquetta walks to the corner down the street to catch the school bus to the La Mesa Middle School.

Like the Peters family, the Alexander family uses the trolley. When their car was out of commission for a month due to a car accident, the Alexanders relied on the trolley for transportation. Both took the trolley to work each day and used it for shopping, going to the library, and just about anything they needed. "If we weren't living here [near the trolley line] I don't know what we would have done," Mrs. Alexander notes.

The Depfer family

The Silver Strand II development, located next to the beach in Coronado, Calif., is home to 180 junior enlisted families.

The Depfer family (mother Jamie, father Jeff, 15-year-old Kelly, 8-year-old Jose, 6-year-old Ashley and 2-1/2-year-old Tiffany), have lived in a three-bedroom unit in Silver Strand II for two and a half years.

"I love it," says Mrs. Depfer. There's a "great view of the ocean" and space for her to garden, she says.

The stucco-exterior townhouses and apartments featuring red tile roofs are only a short drive from the resort town of Coronado.

The development, which was carefully designed to blend into the Coronado community, is so attractive that passersby sometimes mistake it for a commercial development. Mrs. Depfer has been stopped and asked by strangers how much it would cost to buy a townhouse in Silver Strand II.

Mrs. Depfer, who is known throughout the community for her holiday yard displays, delights in being part of a community. The children play in the community playgrounds with their friends from the neighborhood. Tennis courts, basketball courts and a baseball field are also

Lori Hastings and daughters Amanda (left) and Caitlin in their backyard in the Silver Strand II community in Coronado, Calif. Calvin Hastings was unavailable for the photo.

Jeannette Peters and daughter Brianna

Mark Peters and son Ryan

available. The kids can ride their bicycles on the neighboring bike path to Imperial Beach. The Silver Strand Recreation Center sponsors programs such as karate and softball for the children.

She is active in the local community council, which acts as a liaison between residents and the housing office. The council is parents talking to parents, and neighbors working as a community, Mrs. Depfer says. The council also sponsors fun events such as pot luck dinners and garage sales.

In addition to the sense of community, Mrs. Depfer and her husband Jeff, who is a mechanic stationed at Naval Air Station North Island, feel safe in their neighborhood. Mrs. Depfer praises the local police and fire department for their efforts to keep Silver Strand safe. She proudly notes that the neighbors keep an eye out for each other.

The Hastings family

Lori and Calvin Hastings moved their family into a two-bedroom home in Silver Strand II two and a half years ago from an apartment in nearby Imperial Beach. They needed a bigger place in which to live. Mrs. Hastings was especially eager to move into a safe neighborhood because they had a 4-year-old daughter, Amanda, and she was expecting another daughter, Caitlin, now age 2.

One day, on his way to the base, her husband Calvin saw Silver Strand II under construction. The Hastings thought that because Silver Strand II was so nice it must be for senior enlisted personnel. "We were very surprised when we found out it was junior enlisted," she notes. "It [Silver Strand II] surprised a lot of people because it was so nice. Lots of times when people think of military housing, they think of lower standards," she says. The family applied for a unit in Silver Strand II as soon as the development opened.

"Here we're much more comfortable, safer," says Mrs. Hastings. Her husband Calvin, who is assigned to the USS *Monsoon* Pre-Commissioning Detachment, is especially happy with the safe environment in the community. The neighbors are good, and everybody watches out for each other, she says.

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As the Neighborhoods of Excellence program progresses over the next six years, all Navy families can expect to see the improved housing and services that the Peters, Alexander, Depfer and Hastings families have experienced. Quality homes and services and a sense of community will be the hallmarks of Navy housing. ❑

Jamie Depfer and children (from left) Kelly, Jose, Tiffany and Ashley in their living room in Silver Strand II. Jeff Depfer was unavailable for the photo.

The propulsion training facility at Naval Weapons Station, Charleston, S.C., was built using constructability concepts.

A Constructability Success Story: The Charleston Propulsion Training Facility

By John D. Collins, P.E.
Carl R. Sellers, P.E.

How many times have you heard a contractor or a field representative say, *"If they would just let me in on the design I could save everybody a lot of time and money."* There has been a national outcry to have the construction industry work with designers from the very beginning of projects to obtain the most efficient use of time and material. The results include lower project costs and fewer construction problems.

The Construction Industry Institute (CII) thinks these results can be achieved through the application of *constructability* concepts to get construction contractors' involvement during the design of the facility. Constructability is the optimum use of construction knowledge and experience in planning, design, procurement and field operations to achieve overall project objectives. Maximum benefits occur when people with construction knowledge and experience become involved at the very beginning of a project. (From the Construction Industry Institute Publication 3-1, Con-

John D. Collins was the project manager and Carl R. Sellers was the engineer in charge for the propulsion facility training project at the Southern Division, Naval Facilities Engineering Command in Charleston, S.C.

structability: A Primer)

The Construction Industry Institute, established in 1983, is a cooperative research effort between major industry and academia to improve cost effectiveness in the construction industry. Members include Dow Chemicals, General Motors Corp., Shell Oil Co., Bechtel Inc., Brown & Root Inc., and 90 other companies. Some of the participating academic institutions are Georgia Institute of Technology, Stanford University, the University of Texas and Clemson University. The Naval Facilities Engineering Command joined in 1987.

A spirit of cooperation between the team members began with the first face-to-face meeting and grew throughout the design.

In 1989, the Southern Division, Naval Facilities Engineering Command in Charleston, S.C., decided to execute a pilot project using CII constructability concepts. In May 1989, SOUTHDIV selected the propulsion training facility (PTF) at Naval Weapons Station, Charleston, S.C.

The PTF project included support for two moored training submarines, a 300-foot pier, a 65,000 square foot training building, a 5,000 square foot radiological support facility, 73,000 square feet of roads and parking, and two acres of wetlands mitigation.

The Navy chose this project because it was large enough to generate interest from nationally known contractors who have the resources and experience to participate during design. Other reasons for choosing the PTF were the variety of construction types (a large building within explosive safety quantity distance (ESQD) arcs and a pier), and the complexity of the project (radiological support area and short construction duration).

Prequalification

Using prequalification procedures authorized by Defense Federal Acquisition Regulations Supplement 236.273, SOUTHDIV advertised in the *Commerce Business Daily* for construction contractors interested in participating in constructability reviews of design and bidding on the project. (The design contract had been awarded in April 1988 to Gee Jenson Inc., of West Palm Beach, Fla.) Nine firms responded. We evaluated the firms against published criteria ranging from experience and past performance of the contractors and their subs to bonding capacity and design support.

We prequalified four contractors: FRU-CON Construction of Baldwin, Mo.; J.A. Jones of Charlotte, N.C.; Marshal Contractors of Rumford, R.I.; and Ruscon Construction of Charleston, S.C. All four contractors were experienced in heavy building construction and waterfront construction.

Review

All four firms attended a kick-off meeting at SOUTHDIV. A forum composed of the architect-engineer, customer (the Naval Sea Systems Command) and SOUTHDIV personnel explained the unique features of the building (blast resistant and radiological support), pier (permanently moored subs) and the highly technical nature of the construction. The SOUTHDIV personnel also reviewed constructability concepts and explained that this was a pilot project subject to future scrutiny. The contractors appeared enthusiastic about the process but appeared a little uncomfortable sitting at the same table with competitors. However, it was important for team members to meet each other and for SOUTHDIV to make sure that the same information was given to each contractor.

All participants met again after reviewing the 35 percent design. Though most participants agreed that the plans and specifications were not developed enough to provide detailed constructability comments, they did make some large-scale recommendations. Those recommendations included using pre-cast exterior panels instead of cast in place wall sections and conducting a detailed test pile program. SOUTHDIV incorporated the pre-cast alternative but, due to funding constraints, not the test pile program. The participants expected to have more comments when the specifications were developed in more detail.

At that meeting we decided to have another review at 100 percent design rather than at 65 percent design, as originally had been planned. The team decided that, only at that point, would the specifications be developed adequately to provide meaningful comments. Another review conference was considered unnecessary and written responses would be adequate, but everyone agreed to meet again if necessary.

The 100 percent design review yielded many comments. None of the requests involved major structural changes, but the contractors did ask

for clarification of some details on the drawings and in the specifications. Coordination problems were also identified. In general, however, the contractors were very impressed with the quality of the documents produced by the architect-engineer. The A-E responded to each comment. We then returned a complete set of comments, from all four firms, to each contractor. They were all satisfied with the written responses and another meeting was not required. The A-E incorporated changes and additional details into the design.

The bidding phase of the project was encumbered by the Secretary of Defense Moratorium on Military Construction in January 1990. Because of the importance of the project to the Navy and because we only had four bidders, we established a bid opening date six weeks after the final plans and specs became available. A waiver to the moratorium came one week before bid opening, and we opened on time. Though we did receive some additional requests for information during the bidding period, they were few and very minor compared to a normally procured $16 million facility.

We opened bids on Feb. 21, 1991, and awarded the construction contract to Ruscon Construction on March 4 for $16 million. The difference between the first and second low bidders was only $27,000.

Following the contract award, we contacted each of the unsuccessful contractors to get their impression of the process. We asked them if they thought it was successful from their perspective and would they participate again. Their unanimous response was "yes."

Some of their comments were, "*Being part of the decision making helps*," from Gunter B. Sonntag of Marshall Contractors; "*Smoothest bidding ever...concept gets high marks*," from Morris Berk III of FRU-CON Construction; and "*Pre-select philosophy is good*," from Joe Smith of J.A. Jones Construction.

The only recommendations made by the contractors were to reduce the time between submittals and to bid the job closer to the final review.

Overview

A spirit of cooperation between the team members began with the first face-to-face meeting and grew throughout the design. The trust that developed between the Navy, the A-E and the contractors led to an open exchange of ideas without regard to whom would benefit most from them. Also, the contractors were able to reduce some of the contingency costs in their bids because of their familiarity with the contract documents. The A-E agreed that having contractors comment on constructability issues during design improved the design.

Continuing in the spirit of cooperation and innovation, SOUTHDIV used partnering during construction. Synergistic Consulting Group from Mobile, Ala., conducted a partnering workshop that included Southern Division, Ruscon Construction, the customer and the A-E. The workshop broke down existing barriers and developed a spirit of teamwork and cooperation between parties. We established team goals and developed a system to solve problems. (Editor's note: For more about partnering, read *Everyone Wins with Partnering* in the Summer/Fall 1992 issue of the *Navy Civil Engineer*.)

Evaluating the results of the constructability pilot project based on the bid price alone is not feasible. We could not compare the prices we received from the prequalified bidders involved in design reviews to bids received from the conventional competition of bidders with no up-front involvement with design review. But, according to the contractors, their prices were lower than bids for conventionally procured facilities. Their risk was significantly reduced because of their thorough understanding of the design intent.

Additionally, we must consider other factors such as final construction costs, quality of construction, customer focus and timely completion. The only measurable factor here is change order rate. For this project it ran about 4 percent, which resulted from changes in government furnished equipment, criteria changes and limited customer requested changes. Most were due to the complicated nature of a nuclear training facility. Though we had hoped for a lower change order rate, we delivered a high quality facility that satisfies the customer's very intricate training mission in time to meet their needs date.

Based on the success of contractor constructability review on this project, we hope to expand the use of constructability in the future.

Based on the success of contractor constructability review on this project, we hope to expand the use of constructability in the future. ❑

Members of the Italian Forestry Corps stand in front of an ancient cork tree. The foresters were part of an international effort to re-establish the Portuguese cork forests.

Navy Helps Save Ancient Portuguese Cork Oak Forests

By Steven Hubner

The public works department at Naval Air Station Sigonella, Italy, took a lead role in Operation Acorn this past winter. Operation Acorn was an international and inter-agency effort to help Portugal reestablish its ancient cork oak forests, which have been declining since the 1950s.

Commercial cork, from the bark of cork oak trees, is highly sought after for gaskets, wine corks, peg boards and sound attenuation panels. Cork is Portugal's primary export, so the Portuguese Department of Agriculture initiated a genetic improvement program to improve that country's cork oak forests.

Since Portugal is a member of the North American Treaty Organization community, it sought assistance from the U.S. Forest Service. The joint plan between the U.S. Forest Service and Portugal's Department of Agriculture called for the collection of acorns from cork oak forests in the Mediterranean area. Italy, France, Spain, Algeria and Morocco were identified as having native cork oak forests that could be used.

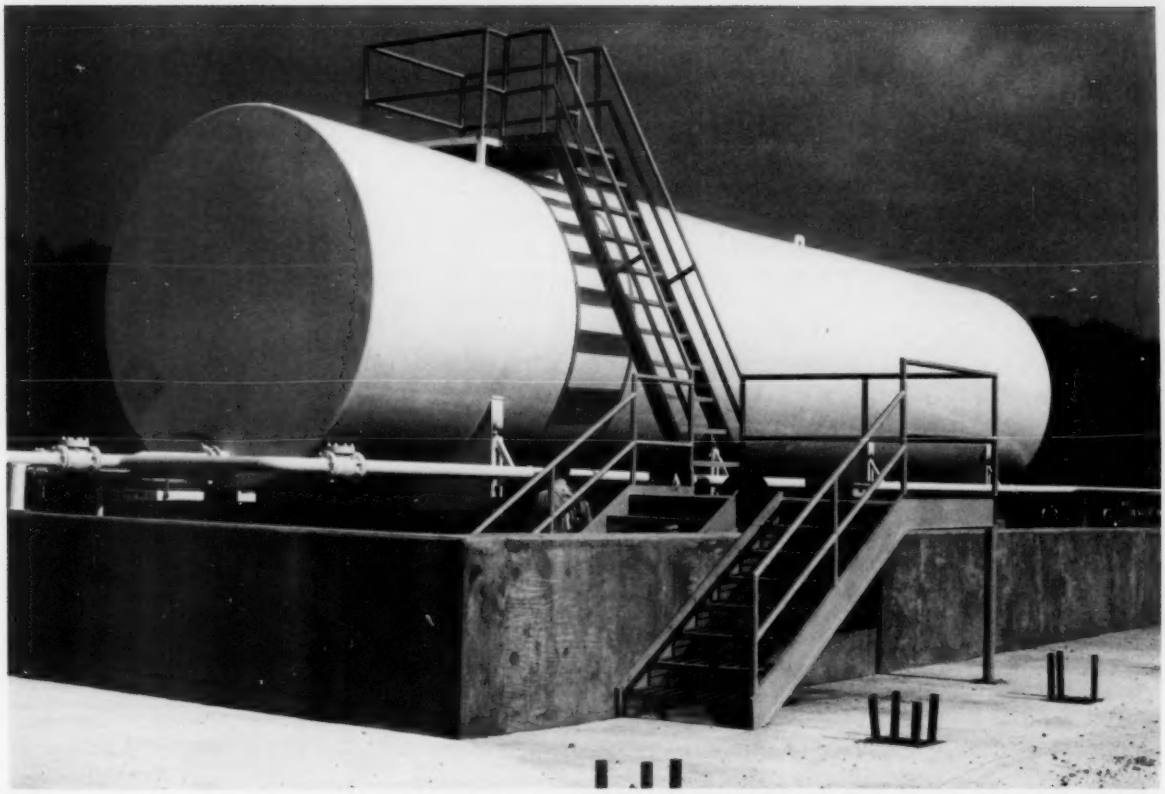
Located on the island of Sicily, NAS Sigonella maintains a remote 1,200-acre transmitter facility near the town of Niscemi. A cork oak forest occupies approximately 400 acres at the south end of the facility and extends into a larger cork oak forest managed by the Italian Forestry Corps.

The forest at Niscemi is one of the last remaining cork forests in Sicily and is part of a relic forest that dates to prehistoric times. The original forest had many different species, such as bay oak, holm oak and cork oak. Throughout the centuries, bay oak and holm oak were used for fuel, construction and ship building. This use of the trees resulted in the depletion of the bay and holm oak species, leaving a pure cork oak forest. Since 1956, Italian law has regulated the harvesting and management of cork forests, which has helped stem the plundering of this resource.

The Atlantic Division, Naval Facilities Engineering Command forester worked with the U.S. Forest Service to review the Niscemi acorn crop and develop procedures for collecting, storing and shipping the acorns. Once the acorns were ripe, volunteers from the NAS Sigonella public works department's environmental division and local Boy Scouts worked with the Italian Forestry Corps to collect approximately 8,000 acorns from 40 trees. The acorns were flown to Rota, Spain, where they were picked up by Portuguese officials.

U.S. Forest Service and Portuguese scientists are now conducting detailed enzyme analyses of the acorns. If the tests reveal healthy and productive traits, NAS Sigonella will supply more acorns. Through this project the U.S. Navy is helping to preserve a portion of the world's forests by working with other nations and agencies. ❑

Steven Hubner is a forester at the Atlantic Division, Naval Facilities Engineering Command in Norfolk, Va.



A fluoropolyurethane lining was used on the interior of this 31,500-gallon tank at the Naval Air Test Center in Patuxent River, Md.

NRL-Developed POL Tank Linings Have Many Uses

By Robert F. Brady Jr., Ph.D.
James R. Griffith, Ph.D.
Richard Thomas, P.E.

Chemists at the Naval Research Laboratory (NRL) in Washington, D.C., work with their counterparts at the Naval Facilities Engineering Command headquarters to formulate and test linings for petroleum, oil and lubricant (POL) tanks. This cooperation has existed for more than 45 years and has produced linings for welded steel and concrete fuel storage tanks.

Dr. Robert F. Brady Jr. is a section head and Dr. James R. Griffith is a research chemist in the materials chemistry branch at the Naval Research Laboratory in Washington D.C. Richard Thomas is the consultant for petroleum fuels and energy at the Naval Facilities Engineering Command in Alexandria, Va.

This article highlights a 15-year collaboration that produced linings for welded steel POL tanks. These easily cleaned, corrosion-resistant linings were developed at NRL, tested at naval bases and transferred to industry.

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NRL developed fluorinated organic polymers for a variety of applications. These polymers are chemically resistant and have been used to coat surfaces such as antennas, storage tanks, transfer tanks and missile launchers. The polymers, which may be fluoroepoxys, fluorourethanes or fluoroacrylics, have a high resistance to sunlight, weather, moisture, soiling and electrical breakdown.

The fluoropolymers were originally developed for use in easily cleaned coatings for aircraft. Although that application never materialized, fluoropolymers make effective ship hull coatings. These fluorinated hull coatings are nontoxic and permit easy fouling release from ship hulls. (Fouling is the barnacles, shellfish, grass, dirt and slime that cling to the bottom of boats.) In developing the coatings, we hoped to replace antifouling coatings (which release a toxicant into the water) with fluorinated coatings, which form only a weak bond to barnacles and other organisms. This bond is broken by the weight of the fouling or the motion of the ship through the water. Tests of fluorinated hull coatings on three ships showed that fouling adhered to the ships. However, with regular hull inspections and cleaning, the coating releases fouling easily and lasts 13 years—twice as long as conventional toxic coatings.

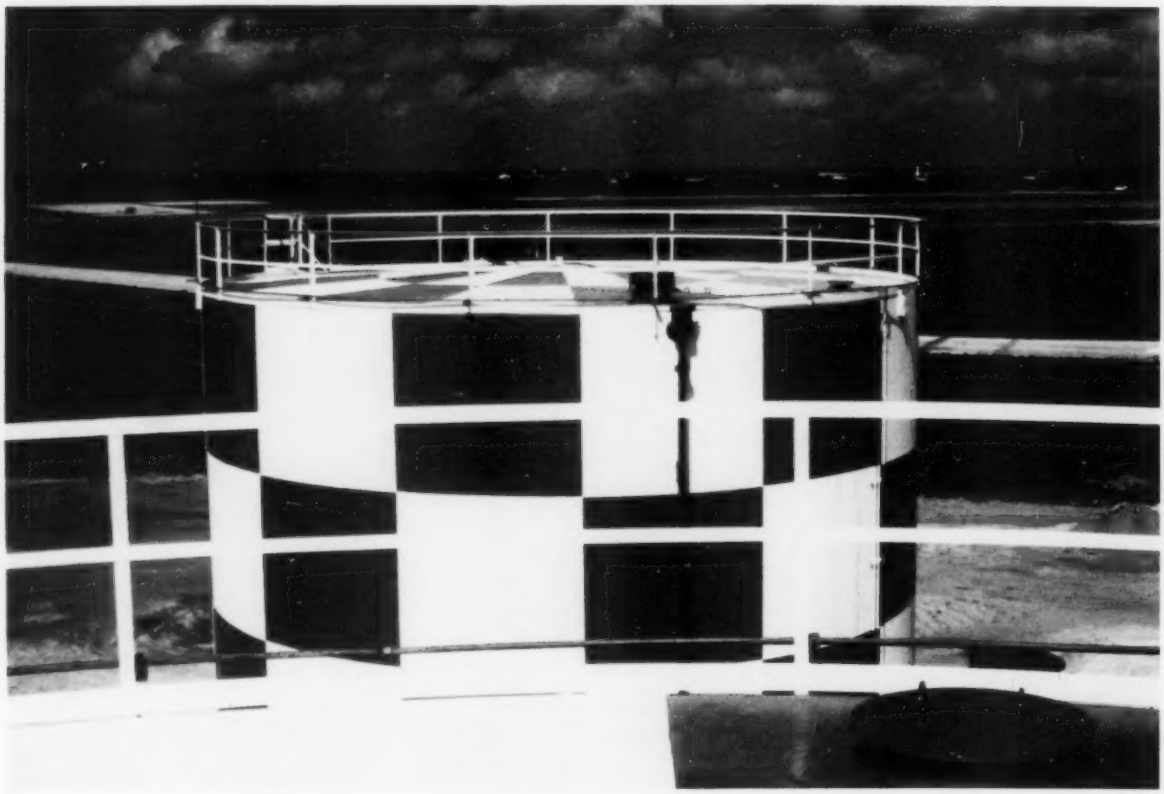
Fuel tank linings

During the last 15 years, NRL has invested intense efforts in the development and testing of effective fluoropolymer linings for fuel tanks. The Navy's large shore-based petroleum fuel storage tanks range in capacity from about 250 barrels (10,500 gallons) to 300,000 barrels. The costs of emptying and cleaning these tanks, preparing their surfaces for coating and applying three or more coatings are so great that the cost of the materials is not an important consideration. Significant savings can be achieved by using linings that last a long time.

The operational readiness of a tank is increased by reducing the number of repainting cycles and expediting required periodic cleanings. The easily cleaned surface of a fluoropolymer lining will permit most cleaning jobs to be performed with high pressure water hoses alone. No detergent is needed and oily waste is processed in an oil-water separator, reducing the high cost of waste water disposal.

Testing and development of coatings goes hand-in-hand with field inspection and support. NRL consultants visit naval petroleum facilities around the world, advise on the selection and application of coatings, inspect coatings and recommend repairs to defects in coatings. This consultant work, supported by engineering and investigation (E&I) funds from NAVFAC headquarters, provides criti-

One of two 500,000-gallon ready-issue fuel tanks on the flight line at Naval Air Station Corpus Christi, Texas. Both of these tanks were lined with the fluoropolymer lining system described in Naval Facilities Guide Specification 09872.



Testing and development of coatings goes hand-in-hand with field inspection and support. NRL consultants visit naval petroleum facilities around the world, advise on the selection and application of coatings, inspect coatings and recommend repairs to defects in coatings.

cal feedback to coatings formulators on the requirements and performance demanded from coatings in field applications.

An organic lining in a steel fuel storage tank protects the steel from corrosion, helps to maintain the fuel's purity and helps to prevent minor fuel leaks. Older large tanks always contain water at the bottom of the tank. This under-the-fuel water bottom accumulates in ponds where the nearly flat bottom of the tank has settled. The water accumulates naturally from condensation and from rain intrusion through open-top floating roof tanks. Water is also present in fuel received from tankers and barges. The lining forms a barrier which prevents the water from corroding the bottom of the steel tank.

To prevent ponding and assist in water removal, newer tanks are built with a bottom sloped 5 percent toward a center sump. Inlet pipes are also angled to produce a swirling motion of incoming fuel which helps to sweep the bottom clean and causes water and particulates to migrate toward the sump. Because the fluoropolymer coating has a non-stick hydrophobic surface, the water forms beads and is easily pushed to the sump. Therefore, fuel in the newer tanks is less contaminated with water than fuel from the older tanks. Modern jet aircraft turbine engines require this cleaner fuel. The fluorinated lining, in effect, produces a "self-cleaning" tank. The lining also helps to prevent leakage, an important quality in this age of environmental concern, although the lining is not intended to heal a structural defect.

In 1978, a small tank at the Naval Air Station Norfolk, Va., was the site of the first field evaluation of a fluoropolymer tank lining. The fluorinated polyurethane coatings tested contained as much as 38 percent by volume of poly(tetrafluoroethylene) (PTFE), more familiarly known as Teflon® or Halon®, which was used as a powder in suspension just like a conventional paint pigment. Coatings with less than 38 volume percent of PTFE demonstrated better performance. This experiment also showed that some fluoropolymer lining formulations stayed cleaner than others.

In 1983, a 750-barrel tank at the Naval Air Test Center in Patuxent River, Md., was lined with an improved fluoropolymer coating and studied to evaluate the usefulness of the lining. We made one curious discovery: PTFE-filled fluoropolymers flow through the lines of airless spray equipment much faster than do conventional coatings.

The first operational tanks of substantial size to be lined with a fluoropolymer coating were two 12,000-barrel tanks at Naval Air Station Corpus Christi, Texas. In 1987, these tanks were lined with a fluoropolymer containing 24 volume percent powdered PTFE in suspension.

The fluorinated polyurethane coating used at NAS Corpus Christi has been approved as the standard lining for the Navy's steel fuel tanks. It is available commercially and has been assigned national stock number 8010-01-316-4677. The coating is manufactured according to an NRL formulation that is in the May 1991 revision of Naval Facilities Guide Specification 09872, *Interior Coatings for Welded Steel Tanks for Petroleum Fuels*. This guide specification covers surface preparation and application requirements for the tank coating system.

Following blast cleaning to a "white metal" condition, the steel is passivated with a wash primer, coated with polyurethane primer and intermediate coats and topcoated with the fluorinated polyurethane lining. Strict time limits are required between blasting and coating, and between each coat to ensure adhesion between layers. Based on the performance of the earlier generation of NRL coatings, the service life of this fluoropolymer system is projected to be well over 30 years.

Lining very large tanks with fluoropolymer began in the spring of 1988 when the first of several 200,000-barrel riveted steel tanks at the U.S. naval base in Yokosuka, Japan, was coated. Because of special problems posed by riveted structures, only the top coat is fluorinated; the primers and undercoats are of more conventional polysulfide or polyurethane compositions. Substantial economies of scale in the production of the fluorinated resins are expected with the onset of large projects such as these. ❑

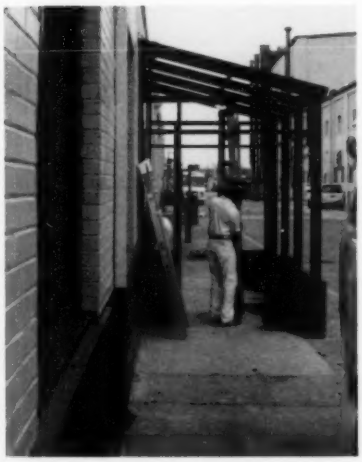
Custom Builders Use Team Approach to Provide Customer Services

By CDR Charles R. Kubic, CEC, USN

Have you ever heard about the public works custom builders? This high energy, quality driven task force is just one of the many exciting new things happening at Navy Public Works Center Norfolk, Va.

The PWC Norfolk maintenance department was restructured as a result of a Secretary of the Navy-directed management review in the 1980s. The need to reduce overhead led to elimination of project schedulers and coordinators and creation of multi-trade shops. Also, first line supervisors were assigned more responsibilities, and projects greater than $25,000 were generally executed by contract. By 1990, customer demand for in-house execution of large projects ($100,000 to $500,000) began to emerge. The PWC work force initially responded to this growing demand for construction services using traditional maintenance management systems. However, these systems tended to break down in the face of large, complex construction projects.

In early 1992, the public works custom builders idea emerged. It established construction management systems to manage large, high interest in-house projects. The turnkey construction services offered by custom builders are on a fixed-price or cost-reimbursable basis using construction management practices that are similar to those employed by Navy Seabees.



A weather-protected entrance is constructed at Naval Air Station Norfolk, Va. This custom builders' project included extensive interior and exterior work. Public Works Center Norfolk partnered with private contractors to complete the project. (Photo by Jim Herwig)

Custom builders is made up of a task force of nearly 100 skilled craftsmen with supporting part-time PWC staff and civilian contractors. A Civil Engineer Corps officer and senior civilian managers lead the task force. The group consists of four principal teams to execute planning, construction operations, contract support and supply.

The custom builders team includes an operations officer, operations chief, project superintendents, planning and engineering coordinators, contract specialists and material specialists. By mid-1993, 11 projects worth $1.4 million were completed, and 17 projects valued at $2.2 million were in progress. Another 19 projects estimated at $1.3 million were programmed to start.

Customer response and work force enthusiasm are very positive. A regional customer wrote this about his experience with custom builders, "Would use again! Unlike any public works crew I've ever dealt with in 30 years!"

Public works custom builders respond to customer requirements for flexible turnkey construction services. This innovative approach preserves good blue collar jobs while offering value added service not easily obtained using traditional design and construction contracting. As the Navy restructures, PWC Norfolk is ready to respond. With the right blend of in-house and contract capability, PWC meets customer construction requirements with predictable schedules, improved quality and a cost conscious project management system. The custom builders team is a total quality task force—they are achieving continuous improvement, not just talking about it. ❑

CDR Charles R. Kubic is the production officer at Public Works Center Norfolk, Va.

Advice of Counsel

Dealing With Environmental Regulators

Part 3: The Notice of Violation

By Ralph Lombardo, Esq.

Editor's Note: This is the final installment in a three-part series on dealing with environmental regulators.

A number of naval installations recently have received notices of violation (NOVs). Regulatory agencies use NOVs to formally notify the recipient that a violation of law, regulation, rule, agreement or permit exists. In addition to the formal notification, NOVs typically contain an enforcement order and a demand for payment of a fine and/or penalty.

Issuance of a NOV dramatically changes the relationship that exists between the installation and the environmental regulator. A regulatory/guidance relationship changes to an adversarial/enforcement relationship. The NOV puts the installation into a defensive posture, where every future action or communication with the agency may have an impact on the resolution of the alleged violation. In many cases, the existence of a pending NOV may, unintentionally, distract attention from other environmental operations at the installation, thus opening the door for a flood of regulatory scrutiny.

Appropriate personnel from the installations must take prompt and appropriate action when a NOV is received. The immediate goal is to begin to take the actions that will lead to an amicable resolution of all relevant issues raised by the regulatory agency. This article will discuss the actions to be taken by the installation. It will also provide a guide to protecting the all-important administrative record.

Internal Navy notification

As soon as the installation receives a NOV, it is critical that the appropriate local Navy attorney be notified *immediately*. NOV recipients usually have a short time in which to file an appeal. (Rhode Island, for example, allows only 10 days.) While many NOVs accurately describe how the recipient may lodge an appeal, some NOVs do not. It may be necessary to research the law to determine appeal rights, deadlines and procedures as well as ascertain the facts needed to file an appeal. This research may take some time and will need to be started immediately by the attorney. Failure to file a timely appeal may have a devastating impact on the government's ability to seek the protection of the federal courts from enforcement of an erroneous NOV.

The Navy Environmental Protection Manual (5090.1A at Appendix C) gives the Navy's formal requirements for immediate internal Navy notification of the occurrence of a NOV.

Review of the contents of the NOV

A careful review of the document is essential. NOVs typically contain four parts: caption, recitals, findings and the order.

The **caption** is the identification of the alleged violator. Be certain the NOV belongs to this installation. It is not uncommon that a NOV directed to a non-Navy tenant improperly names the installation as the violator. Also, sometimes an installation receives a NOV for actions occurring at another facility. In these cases, the regulatory agency must be immediately and officially notified (for the administrative record) that the issuance of the NOV was in error.

The **recitals** are the statement of facts from the perspective of the regulatory agency. This is the "whereas" section. These facts usually form the basis of the findings of the agency. Any inaccuracies or misunderstandings in the recitals must be corrected for the record, early in the

Ralph Lombardo is the associate counsel (land use) at the Northern Division, Naval Facilities Engineering Command in Lester, Pa.

process. It is important that discussions and negotiations continue on a common understanding of the correct and relevant information.

The **findings** contain the determinations and allegations of the agency that violations have occurred. These findings are based on interpretation of law by the agency and with the understandings contained in the recitals. Navy attorneys will make an independent evaluation of agency findings and prepare legal challenges where appropriate.

The **order** is where the agency directs some response, action or the payment of fines. Where an agency directs that a written response be submitted, that response should discuss any discrepancies found in the findings, any corrective actions taken or planned. The response should not agree that a violation exists or why such a violation occurred. An admission, on the record, that a violation exists can be damaging later should negotiations break down and the Navy is forced into litigation. All responses must be filed in the time prescribed by the NOV or any relevant legal document.

The NOV may direct that immediate action (such as cease a discharge) be taken. If that action will not affect health, safety or the environment, the installation should comply with the order. Immediate discussions can begin with the agency to allow resumption of the normal operation. Where compliance will cause a serious health, safety or environmental problem, the regulator must be notified immediately that the operation will continue. In cases where the NOV is not enforceable against the installation, the operations should continue only on the advice of the appropriate Navy attorney.

Self-evaluation

Immediately upon receipt of the NOV and while other actions are proceeding, the installation should conduct a self-evaluation of the allegations. All facts stated in the NOV must be verified or disputed. Results of the self-evaluation will be needed to protect the Navy's position in the administrative record, establish a basis for negotiation and, if needed, for a defense. The self-evaluation should be conducted by a team of experts with the technical, operational and legal abilities to independently evaluate the status of the situation.

Post-evaluation actions

In an enforcement action, many courts will look favorably upon an alleged violator when corrective actions are taken immediately upon notification of a violation. Therefore, it is important to take appropriate actions immediately. Where a violation can be readily corrected, correct it. For example, where the alleged violation is mislabeled hazardous waste containers, correct the labels. Take all corrective actions immediately and forward documentation to the regulator's administrative record as soon as possible.

In some cases the correction of a violation will entail funding, planning and construction. Start the process immediately. Take all actions that are within the installation's legal authority that lead to a final corrective action. Again, the establishment of a plan of action and the initiation of the process must be documented for the administrative record. Should the agency disagree with the plan or the initiation of the corrective action, the basis for negotiation is then established.

Initiate negotiations

Informal negotiations between Navy and agency representatives to identify the issues can begin immediately. The goal is to set the stage for formal negotiations that will lead to the exact terms of a settlement document for resolving the NOV. Whether negotiations are formal or informal, it is important that a Navy attorney participate in all discussions. Any statements and communications made during "unprivileged" discussions may be used against the installation. The attorney's role, in part, will be to make sure that the discussions are tailored to the appropriate areas needed to protect the best interests of the Navy.

Negotiation will involve a number of areas, such as compliance schedules, future inspections, the administrative record, payment of fines, notification procedures, and the drafting of a document in compromise and settlement.

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My goal in the three articles (administrative record, facility inspection and the notice of violation) in this series on environmental regulators was to illustrate that these areas represent an installation's primary day-to-day interactions with the environmental regulatory community and to provide guidance on dealing with the regulators.

All three are interrelated, with the administrative record serving as the centerpiece of the relationship. In the age of partnering, the Navy strives to keep a good working relationship with the federal, state and local officials. Those relationships will work only if the communication lines remain open and we each respect our common goals of protecting the public trust. ❑

Total Quality Leadership Update

TQL Approach Results in Cool Customers

By Michael M. Blank, Ph.D., P. E.
Mike Hunter, P. E.

Scientists and engineers of the Naval Air Warfare Center, Aircraft Division in Warminster, Pa., have worked to develop the most sophisticated defense systems and technologies in the world for the U.S. Navy. It is vital to keep our work areas warm in the winter and cool in the summer, and to provide the proper climate control conditions to personnel who work in these areas.

In the summer of 1992, the air conditioning system had reached its capacity. The long, sunny days with near-tropical heat and humidity had strained every piece of equipment to its limit. At this time, a major piece of equipment (a 325-ton chiller) failed, leaving offices and laboratories—many of them interior rooms—without air conditioning. Management turned to the public works department and its public works officer, Commander D. Scott Bianchi, CEC, USN, and the deputy public works officer, Thomas Ames.

Fortunately, the public works department had anticipated the failure of the chiller and had ordered a more efficient 400-ton replacement, but it had not yet arrived. In the meantime a great deal of planning, design and coordination would have to be done. Realizing that the normal procurement steps would take too long, CDR Bianchi chose a Total Quality Leadership (TQL) approach that emphasized employee empowerment and teamwork. To lead this effort, he chose the director of the facility management division, John Chmielewski.

A long-time employee, with an intimate knowledge of the center, Chmielewski put together a team of men and women with a variety of skills. He assumed broad authority for project direction. He empowered the team members by giving them considerable latitude in deciding how to get the job done. He gave the members the freedom to respond with creative new thinking tempered by the lessons of experience.

The immediate problem was the restoration of the air conditioning service. Without the replacement chiller, the rental of a portable unit offered the best chance to return a sense of normalcy to the work areas. The TQL team decided to use a combination of government and contract labor to install the rental unit with a minimal disruption in work. Skilled tradesmen from the Philadelphia Naval Shipyard removed the old piping and insulation to prepare the site for contract workers, who made the service connections and placed the unit in operation.

While the temporary work progressed, other TQL team members worked together to plan for the long-term solution—the installation of the new 400-ton chiller. Government workers completed most of the tasks for this phase. Government engineers, technicians and laborers designed and installed the piping, pumping, electrical and control systems. Only the construction of the foundation was assigned to an outside contractor. The TQL process emphasizing teamwork worked well. Against an already ambitious timetable, the project was finished five days ahead of schedule.

Total Quality Leadership, an outgrowth of the management principles that W.E. Deming taught to the Japanese after World War II, has gained an increased acceptance among corporate executives in this country. Although helpful in managing complex undertakings, TQL principles such as teamwork and worker empowerment can also be used in directing more routine work, such as this project at the Naval Air Warfare Center.

Teamwork, empowerment and communication are the keys to successful TQL program. Leaders must also be willing to abandon the traditional top-down style of authoritarian leadership that has been used in this country for two hundred years. In a new age of global economic and military competition, we cannot afford to do less. ❑

Michael M. Blank is the energy program manager at the Naval Air Warfare Center, Aircraft Division in Warminster, Pa. He is an active member of numerous ASCE committees including emerging energy technologies; inspection; material applications; and metrications. Mike Hunter, is the head of the Energy and Environmental Branch of NAWCAD Warminster.

The authors would like to acknowledge the encouragement and enthusiastic support of Commander D. Scott Bianchi, CEC, USN, public works officer, and Thomas C. Ames, deputy public works officer, in the implementation of TQL at Naval Air Warfare Center, Aircraft Division, Warminster.

Enlisted Family Housing Opens at CBC Port Hueneme

The first 48 of 300 two-bedroom apartments were opened at a ribbon cutting ceremony on Sept. 10 at Naval Construction Battalion Center Port Hueneme, Calif.

The 801 housing project, for enlisted military personnel and their families, will be completed in several phases over the next five months. The garden-style, 1,019 square foot apartment complex includes community and recreational facilities.

Seabees Adopt New Uniform

A Seabee tradition is transitioning due to the changing roles for the U.S. Armed Forces. The utility green uniform will be gradually phased out over the next couple of years. The more commonly issued camouflage uniform, worn by the three other services, will replace "Seabee Greens." Our wearing of cammies is the visible right step toward jointness in field operations.

Some secondary reasons for the change are the escalating cost of having the utility uniform manufactured almost exclusively for the Seabees and the unavailability of extra uniforms when the Seabees gear up for an operation.

The Second and Third Naval Construction Brigades are implementing the transition to the new uniforms. Naval Mobile Construction Battalions Four and Seven will be the first battalions to make the transition. As the woodland green cammies become available, other units will receive their initial uniform issue.

CAD-2 Contract Is Awarded

The Naval Facilities Engineering Command Facilities CAD-2 contracts have been awarded to Intergraph Corporation of Huntsville, Ala., and to Cordant Incorporated of Reston, Va. The 12-year contracts, awarded on Aug. 30,1993, have a duration of eight years for purchase and an additional four years for maintenance, training and support services.

Under these awards, the contractors will compete against each other for government business. Each contract has a guaranteed minimum of $1 million over its life; however, the total obligation against both contracts may not exceed the approved Delegation of Procurement Authority of $550 million.

Cordant is providing Sun workstations with the majority of the applications based on AutoCAD software. Intergraph is providing its own MicroStation software.

These contracts will be used to fulfill facility engineering requirements for computer-aided design and drafting (CADD), geographic information systems (GIS) and other computer-aided facility management for the Navy as well as other DOD and civilian agencies with a facilities engineering mission. The contracts are mandatory for the Navy for facilities engineering requirements and optional for other agencies.

EFA Chesapeake and NFESC Are Established

On Oct. 1, 1993, **Engineering Field Activity Chesapeake** (EFA Chesapeake) and the **Naval Facilities Engineering Service Center** (NFESC) were established.

EFA Chesapeake administratively replaces the former Chesapeake Division, Naval Facilities Engineering Command, in Washington, D.C. EFA Chesapeake is one of the component commands of the Atlantic Division, which also includes EFA Chesapeake; EFA Mediterranean, Naples Italy; and Officer in Charge of Construction Naval Hospital, Portsmouth, Va.

The Northern Division, NAVFAC, in Lester, Pa., is scheduled to join the Atlantic Division on Oct. 1, 1994.

NFESC was established to consolidate the missions of five NAVFAC organizations:

- Naval Civil Engineering Laboratory (NCEL)
- Naval Energy and Environmental Support Activity (NEESA)
- Ocean Engineering and Construction Project Office (Formerly FPO-1, now FAC 07)
- Communications/Electronics Facilities Project Office (FPO-2)
- NAVFAC Chief Engineer (FAC 04B)

NFESC is headquartered in Port Hueneme, Calif., with the former NEESA and NCEL sites providing office and laboratory spaces for the West Coast operations. The former FPO-1 (now FAC 07), FPO-2 and FAC 04B are located in the Washington Navy Yard as part of EFA Chesapeake. FAC 07, FPO-2 and FAC 04B will remain in the Navy Yard and form the East Coast Detachment of NFESC.

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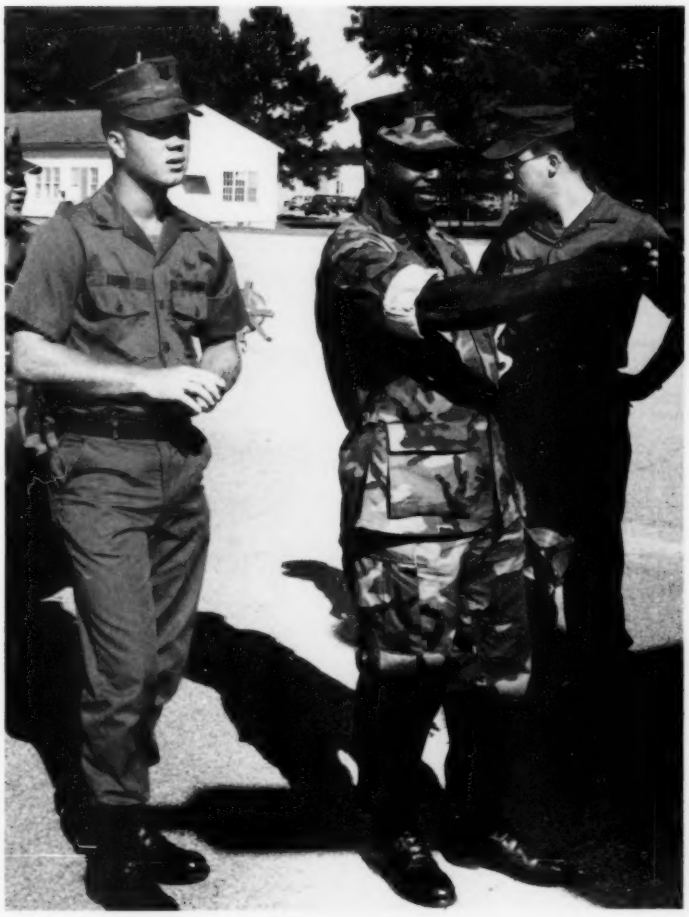

The old and the new...

Naval Mobile Construction Battalion Seven Seabees (from left) EA3 Daniel C. Lewis, EA2 Michael Pace and EACN Joseph S. Copeck are a study in contrasts. EA2 Pace is wearing the Seabees' new uniform—woodland green cammies—while the other Seabees wear the traditional "Seabee Greens." For more about the transition to the camouflage uniform, see page 30. (Photo by JO2 Randy Bagoly, NMCB Seven)

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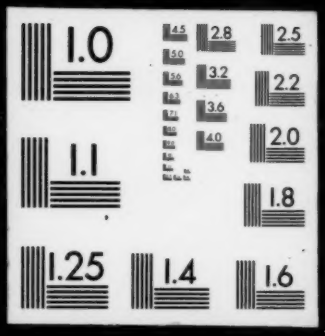
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